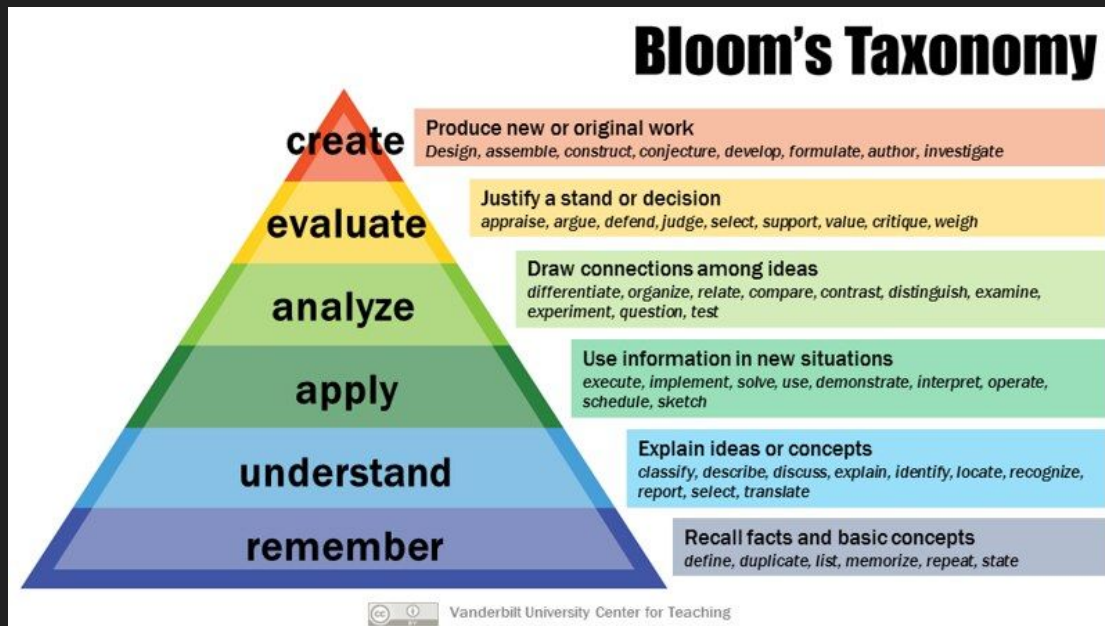

Learning Goal

- Learning Goals and Objectives
 - Why Teach ALife?
- What do we want students to learn?
 - Learning Goals vs . Learning Objectives
- Exercise in collective goal development
 - Germinating brainwriting seeds from AEdU-West

Learning Goals vs. Learning Objectives

- Learning Goals: broad statements about achievements/competencies
 - *Students will be able to discuss and ask reasonable questions about selection in a novel system.*
- Learning Objectives: demonstrable abilities
 - *Students will be able to implement a genetic algorithm.*
- “Learning goals are the **intended purposes** and desired achievements of a particular course” - Brown Center for Teaching and Learning
 -

Learning Goals for ALife



Learning Goals for ALife

Goal of next 1.5 hours:

- Come up with set(s) of **learning goals** for an artificial life class
- Ideally these goals will be applicable to **any level of class**
- **Could use this set as the foundation for an Artificial Life Journal publication, let us know if you are interested!**

“Learning goals are the **intended purposes** and desired achievements of a particular course” - Brown Center for Teaching and Learning

Brainwriting

- “Written brainstorming”.
- Separates ideation from discussion to cultivate multiple viewpoints.
- Aims to avoid loudest voices dominating.
- Traditionally done with notecards/paper.

Our Task

- Starting with the seeds generated during AEdu-West:
 - **Distill** AEdu-West learning goals.
 - **Identify** gaps and **reinforce** essentials. What did they miss? What can we add or boost?
 - **Coalesce** learning goals: which are core, secondary, tertiary?

ALife Learning Goals

(Consolidated by Anya Vostinar, modified by QTD)

It's not an "ALife" class unless students learn:

1. What "life" is and therefore what alife is "Domain"
 - a. Hard/soft/wet/art
 - b. Current open questions and goals in the field
 - c. (Brief) History of the field and its relationship to other fields
2. How to think about bottom up versus top down/emergence/simple rules/abstract "Mindset"
 - a. How to formalize a problem, figure out what is important in the system
 - b. How to think about/ask "what if" question, when you have total control of system
 - c. Making sure not to have guaranteed the outcome via your rules
3. How to actually create something that is an alife model/technique "Methodology"
 - a. How to "do" alife
4. How has/can alife solve a problem/answer a question in another field "Rigour"
 - a. What are alife's strengths and weaknesses
 - b. Building alife skillset (learn about several frameworks)

Clusters

Common clusters:

- Philosophy of alife
 - “Mindset”
 - Ethics
 - Definitions
- Methodology/Techniques of alife
 - Soft/wet/hard/art
 - How to do it generally
 - How to conduct scientific experiment with one of the techniques
- Practical use/value of alife
 - When has it been useful to other fields
 - How to recognize that it could be useful?
 - How to communicate useful results back out to other fields
- History of the field

Coalescing Goals

“It wouldn’t be an ALife class if it didn’t have this”

4 People

Part 1: Generating Learning Goals



Part 2: Identifying Common Clusters

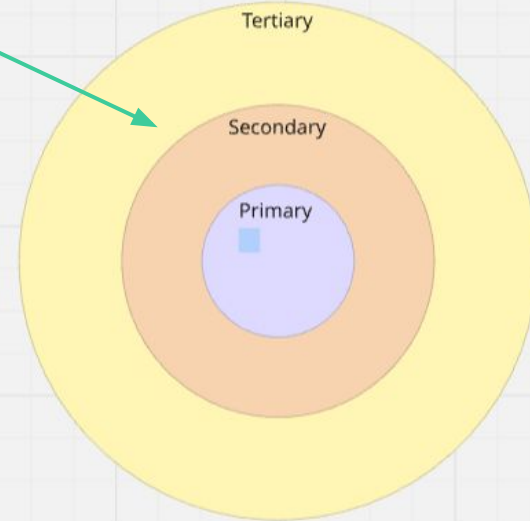
CPX everyone's favorite goals into gray box. Discuss possible areas of overlap. Name clusters and place goals into them.



Part 3: Identify Core Learning Goals (as time allows)



Part 3: Identify Core Learning Goals (as time allows)



AEdu-East: Prioritising ALife Learning Goals 1/3



Q. Tyrell Davis 2:52 PM

Prioritising learning goals

Add learning goals to threads as **primary** (*i.e.* core), **secondary**, and **tertiary** levels. Feel free to suggest novel learning goals and to use the thread "ALife Learning Goals from AEdu-West" for ideas from the earlier session. Use the threads "Primary Learning Goals", "Secondary Learning Goals", and "Tertiary Learning Goals" for assigning candidate learning goals, and this channel (`#learning-goals`) for discussion.

- Primary learning goals are those that you think are essential to any ALife course.
- Secondary goals are important, but may be more specific to a given course's content.
- Tertiary goals may be interesting and important, but could be even more specific or student-directed (*e.g.* special topics and projects)

Stay vigilant for so-called "strange loops" in the learning goal hierarchy, for which secondary or tertiary goals entail core concepts that feed back into primary learning goals.



Q. Tyrell Davis 2:58 PM

[https://upload.wikimedia.org/wikipedia/commons/6/6b/Aurelia-aurita-3-0049_\(cropped\).jpg](https://upload.wikimedia.org/wikipedia/commons/6/6b/Aurelia-aurita-3-0049_(cropped).jpg)

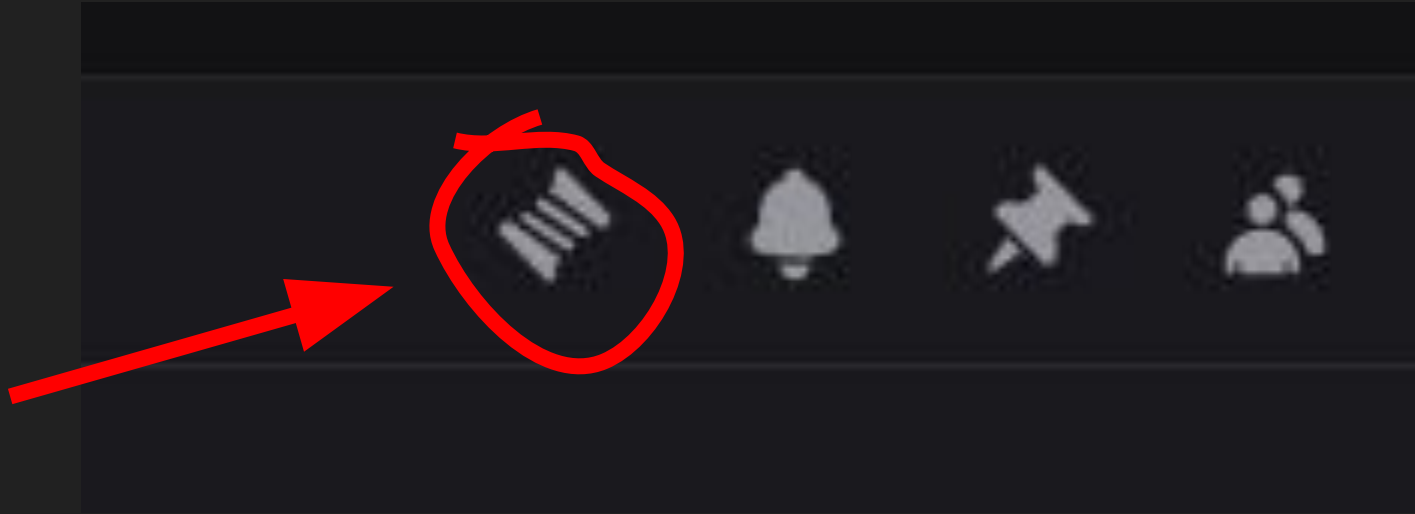
ALife Learning Goals from AEdu-West



1. On Discord: Head to `#learning-goals` channel
2. Discuss novel learning goals and those from AEdu-West activity.
3. Populate primary, secondary, tertiary learning goals threads.

What concepts, ideas, etc., constitute the *vital* essence of any ALife course or lesson?

AEdu-East: Prioritising ALife Learning Goals 2/3



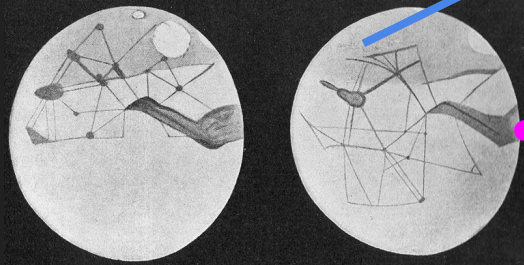
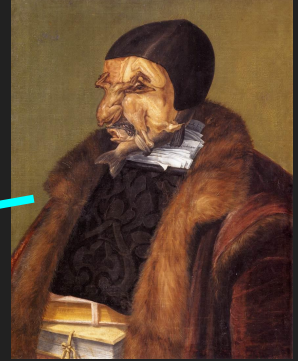
On #learning-goals channel, look for the thread icon!

AEdu-East: Prioritising ALife Learning Goals 3/3



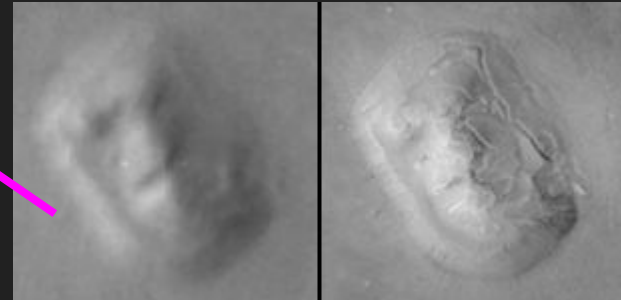
● AEdU-West learning goals
(*Aurelia aurita* with DeepDream
by MartinThoma) .

- Primary learning goals thread
(*The Jurist* by Giuseppe
Arcimboldo, 1566).



● Secondary learning goals
thread (Martian “canals” by
Percival Lowell).

● Tertiary learning goals thread
(Face on Mars from Viking
mission, NASA).



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